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EXAMINER

DUONG, THO V

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/837,072

Applicant(s)

BROST ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 June 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 3-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 June 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 6/4/2002 have been fully considered but they are not persuasive. Applicant's argument that reference to Bengtsson does not disclose a collecting tank that extends past a bifurcation in the ends of its tubes, has been very carefully considered but is not deemed to be persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The teaching of bifurcation is clearly disclosed in reference to Bengtsson. However, Bengtsson does not disclose that a collecting tank extending past the root area where the bifurcation begins. Attention is directed to Donaldson's reference, which teaches about having a collecting tank (10) extending past the root area, where the tube's end begins to expand into two opposite direction relative to the longitudinal axis of the tube, to direct air away from tube end section into the tube and fins areas to enhance the heat transfer rate of the radiator. Therefore, the combination device of Bengtsson and Donaldson is considered to read on the claimed limitation that the collecting tank extends past a bifurcation of the ends of its tubes.

In addition, applicant's argument that the fins of Donaldson do not appear to be at all compatible and to be an enhancement to the heat transfer performance of Bengtsson, has very carefully considered but is not deemed to be persuasive. In response to the applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must

Art Unit: 3743

be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Donaldson teaches clearly in figure 1 that fins (13) are installed between two tubes (12). As it is well known in the art that the purpose of fins is to increase the heat transfer surface areas of the tubes so that the heat transfer performance of the tube can be enhanced.

In view of the proposed amendment to figure 4C, the claimed subject matter of claims 12 and 13 overcome the previous 112 second paragraph rejection since now, the drawing shows the step of adapting one end... is carried out after assembling the radiator core and the step of inserting a forming tool.

In view of the response to applicant's argument, claims 1,2 and 11 still remain rejected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson (US 4,313,494) in view of D. M. Donaldson (US 3,265,126). Bengtsson discloses (figure 1) a radiator comprising a radiator core defining a front and a rear face including a plurality of tubes (1); a collecting tank attached to the core in a fluid tight manner to provide fluid communication between the tubes (1) and the collecting tank; the tubes each having a pair of side walls (2,3) extending through the core and joined by end walls (4) at the front and rear

Art Unit: 3743

faces of the core wherein the end walls (4) of each tube are bifurcated for a distance at one end of the tube; both side walls are directed away from each other to join in a fluid tight manner with the side wall of an adjacent tube in the core. Bengtsson does not disclose that layers of fins interleaves between the tube and the collecting tank extending past the bifurcation. Donaldson discloses (figure 1, and column 1, lines 60-65) that a radiator having a plurality of fins (13) interleaving between tubes (12); a collecting tank (10) is attached to a core in a fluid tight manner wherein that tank (10) extends over the front and rear faces of the core and pasting the joined end tube section (54) to direct air away from the tube end section and into the tube and fins (13) areas to enhance the heat transfer rate of the radiator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Donaldson's teaching in the Bengtsson's radiator to enhance the heat transfer rate of the radiator.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson and Donaldson as applied to claim 11 above, and further in view of Potier (US 6,044,554). Bengtsson and Donaldson substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the step of modifying the tube end is carried out after the step of assembling the core. Potier discloses (figure 11, column 5, lines 56-60) a process of making a heat exchanger that has a step of modifying the tube end (38) after the step of assembling the heat exchanger core so that the resulting configuration of tube ends is obtained by means only of the step of modifying the tube ends. If the tube end is modified after the step of assembling the heat exchanger core, the resulting configuration of tube end can be affected by the step of assembling the fins to the tubes such as brazing or welding...It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Potier's teaching in the

Art Unit: 3743

combination device of Bengtsson and Donaldson to obtain the resulting configuration of tube's end by means only of the step of modifying the tube ends.

***Allowable Subject Matter***

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

Art Unit: 3743

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7764.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.

Tho Duong

September 25, 2002

Henry Bennett  
Supervisor / Patent Examiner  
Group 3700

